

WHAT IS CLAIMED IS:

1. A liquid crystal display device comprising:
a pair of substrates;
a liquid crystal layer filled between said pair of substrates; and
a plurality of pixel electrodes and common electrodes formed on one of said pair of substrates for supplying an electric field to said liquid crystal layer, wherein the liquid crystal display device is configured so that a response time between a lowest brightness level and a highest brightness level is less than 16.7 ms, and wherein said liquid crystal layer contains a range of 40% or more weight percentage to 100% or less weight percentage of a constituent component with a dielectric anisotropy of $\Delta\epsilon \leq 1$.

2. A liquid crystal display device comprising:
a pair of substrates;
a liquid crystal layer filled between said pair of substrates; and
a plurality of pixel electrodes and common electrodes formed on one of said pair of substrates for supplying an electric field to said liquid crystal layer,

wherein the liquid crystal display device is configured so that a response time between a lowest brightness level and a highest brightness level is less than 16.7 ms, and

wherein said liquid crystal layer contains a range of 40% or more weight percentage to 90% or less weight percentage of a constituent component with a dielectric anisotropy of $\Delta\epsilon \leq 1$.

3. A liquid crystal display device comprising:

a pair of substrates;

a liquid crystal layer disposed between said pair of substrates; and

a plurality of pixel electrodes and common electrodes formed on one of said pair of substrates for supplying an electric field to said liquid crystal layer;

wherein the liquid crystal display device is configured so that response time between gray levels is less than 16.7 ms, and

wherein said liquid crystal layer contains a range of 40% or more weight percentage to 100% or less weight percentage of a constituent component with a dielectric anisotropy of $\Delta\epsilon \leq 1$.

4. A liquid crystal display device comprising:

a pair of substrates;

a liquid crystal layer disposed between said pair of substrates; and

a plurality of pixel electrodes and common electrodes formed on one of said pair of substrates for supplying an electric field to said liquid crystal layer;

wherein the liquid crystal display device is configured so that response time between gray levels is less than 16.7 ms, and

wherein said liquid crystal layer contains a range of 40% or more weight 90% or less weight percentage of a constituent component with a dielectric anisotropy of $\Delta\epsilon \leq 1$.

5. A liquid crystal display device comprising:

a pair of substrates;

a liquid crystal layer disposed between said pair of substrates; and

a plurality of pixel electrodes and common electrodes formed on one of said pair of substrates for supplying an electric field to said liquid crystal layer;

wherein said liquid crystal layer has a birefringence Δn and a dielectric anisotropy $\Delta\epsilon$ which satisfy the condition $\Delta n/\sqrt{\Delta\epsilon} \leq 5.5 \times 10^{-2}$; and

wherein said liquid crystal layer contains a range of 40% or more weight percentage to 100% or less weight percentage of a constituent component with a dielectric anisotropy of $\Delta\epsilon \leq 1$.

6. A liquid crystal display device according to claim 5, wherein a distance L between said pixel electrodes and said common electrodes satisfies the condition of $L \times \Delta n/\sqrt{\Delta\epsilon} \leq 0.55 \text{ } \mu\text{m}$.

7. A liquid crystal display device according to claim 5, wherein a distance L between said pixel electrodes and said common electrodes satisfies the condition of $L \times \Delta n/\sqrt{\Delta\epsilon} \leq 0.4 \text{ } \mu\text{m}$.